

ENTON  
AMOT  
9/1/05

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended). An air-fuel ratio sensor comprising:
  - a cylindrical housing having a first end and an opposite second end;
  - an air-fuel ratio sensor element inserted through the cylindrical housing and capable of detecting an air-fuel ratio in an atmosphere of unburnt gas, the sensor element having a detecting portion for performing detection of the air-fuel ratio;
  - an atmospheric side cover disposed on the first end of the cylindrical housing and defining an inside chamber for storing therein atmospheric air; and
  - a measured gas side cover disposed on the second end of the cylindrical housing so as to cover the air-fuel ratio sensor element and defining an inside chamber for storing therein a gas to be measured,
    - wherein the measured gas side cover has a nested structure composed of a plurality of cup-shaped cover members disposed one inside another, each of the cup-shaped cover members having a gas inlet hole formed in a side wall thereof for introducing the measured gas into the inside chamber of the measured gas side cover, and a bottom hole formed in a bottom wall thereof,
    - wherein the gas inlet hole of an innermost one of the plurality of cover members that directly faces the air-fuel ratio sensor element is offset from the detecting portion of the air-fuel ratio sensor element toward the housing in an axial direction of the air-fuel ratio sensor, and
    - wherein the cylindrical housing has an end face facing the inside chamber of the measured gas side cover at the second end of the housing, the detecting portion of the air-fuel ratio sensor element is spaced from the end face of the housing by a first distance in the axial direction of the sensor, and the gas inlet hole of the innermost cover member has a center located at a position spaced from the end face of the housing in the axial direction of the sensor by a second distance smaller than one-half of the first distance, and